

OFFICE OF MANNED SPACE FLIGHT
PROGRAM DIRECTIVE

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APOLLO PROGRAM DIRECTIVE NO. 32B

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FROM: *Sam C. Sullivan*
APOLLO PROGRAM DIRECTOR

SUBJECT : Quality and Reliability Assurance Auditing

- REFERENCES:
- a. NHB 5300.1A, Apollo Reliability and Quality Assurance Program Plan.
 - b. NPC 200-2, Quality Program Provision for Space System Contractors
 - c. NPC 250-1, Reliability Program Provisions for Space System Contractors
 - d. NPC 200-1A, Quality Assurance Provisions for Government Agencies
 - e. NHB 5330.7, Management of Government Quality Assurance Functions for Supplier Operations
 - f. NPD 5330.8, MSF Quality Assurance Audit and Discrepancy Reporting

I. PURPOSE

The purpose of this Directive is to specifically identify responsibilities for planning, conducting, and reporting on audits of quality and reliability program activities at all Apollo Program organizational levels. It further defines the general auditing requirements specified in references a through f.

II. SCOPE

This Directive is applicable to audits conducted of all Apollo Program Offices, appropriate Government Inspection Agencies, Apollo contractors, subcontractors and suppliers. The Q&RA Program activities for all Apollo flight and ground systems and equipment will be audited.

III. RESPONSIBILITIES

All NASA Apollo Program Offices shall be responsible for the implementation of requirements established by this Directive.

IV. ACTION REQUIREDA. Audits

The following organizations will audit the lower level organizations as indicated:

1. The Apollo Program Office will audit all MSF Center Apollo Program Q&RA functions and activities.
2. Center Apollo Program Offices will audit line organizations assigned Apollo Q&RA responsibility, or delegate such audit requirements to an appropriate Center organization. They will similarly audit Government Inspection Agencies assigned to Apollo contractors, subcontractors and suppliers.
3. Center Apollo Program Offices will audit (or delegate authority to Government Inspection Agencies to audit) Apollo Q&RA activities at contractor, subcontractor, and supplier plants.
4. Center Apollo Program Offices shall require Apollo contractors/subcontractors to audit in-house Q&RA activities and those of subcontractors and suppliers.
5. In order to minimize the need for duplicate audits and provide for an exchange of experience, audit team membership should include a selective combination of representatives from centers, contractors, engineering, and manufacturing, as well as the auditing agency's Quality and Reliability Assurance organization. Membership should be selected on the basis of recognized responsibility and authority compatible with the level of the audit.

B. Audit Procedures

General guidelines for audit procedures are contained in references a, b, c, d, e, and f. These procedures should be implemented in such a way that technical hardware problems can be related to deficiencies in engineering, manufacturing, or quality assurance functions. In those instances where a delegated agency is performing an audit for one or more other organizations, the audit agency shall coordinate and obtain approval for procedures.

C. Close Outs

Auditing organizations will forward the audit report to the organization having responsibility for implementing the recommendations fifteen days after completion of the scheduled audit period. Organization having responsibility for implementing recommendations shall take prompt action to effectively close out all recommendations. Effective close out will include identification of the action taken, manner and time of implementation, and positive feedback of the completion of the action. It is required that documented traceability be maintained on all actions. Audit reports will be replied to by the responsible organization thirty days after receipt of the report, and every thirty days thereafter until the approved close out of all recommendations. Any noncompliance with recommendations will be fully justified.

Auditing organizations shall review all close out actions and notify in writing the responsible organization fifteen days after receipt of the replies, of their approval or disapproval of the close out action. The auditing organizations will maintain a log on the transmission of the report, receipt of replies, and transmission of approval/disapproval of the replies. In addition, the auditing organizations will maintain status of close out on all audits until completely closed out.

D. Status Reports

The Center Program Offices shall submit an audit status report on the first of every month to the Apollo Program Office, attention: MAR. This report shall cover center and prime contractor audit activity as follows:

1. Audits scheduled for the coming three (3) months.
2. Audits completed during the past month.
3. A matrix indicating the number of both open and closed action items for each completed audit that has not been fully closed out.
4. Copies of audit reports published during the past month.

5. Action taken by the Center to close out center action items initiated by Headquarters audits.

In addition, Center Program Offices shall report the results of Quality and Reliability audits of major flight assembly (S-IB, S-IC, S-II, S-IVB, LM, CSM) suppliers at the MSF Management Council once each quarter. Reporting will be in accordance with reference f.

E. Schedules

In conjunction with information provided by the Centers, the Apollo Program Office will publish each quarter a combined Center and Prime Contractor audit schedule that will assist in eliminating duplication of audits. Schedules should provide for an audit of each activity at least once a year. This does not preclude conducting special reviews at any time to investigate specific problem areas.

V. IMPLEMENTATION

The requirements of this Directive are effective immediately and the implementation shall be periodically reviewed for compliance by the Apollo Program Office.